I. Form PTO-1449

The Examiner has included an initialed form PTO-1449 with the pending office action. However, it appears that the Examiner has initialed some references that were originally crossed out. As a result, the foreign patent documents listed in the PTO-1449 are initialed while having a line drawn through the citation. Accordingly, Applicant submits herewith, for the Examiner's convenience, a clean version of form PTO/SB/08 A&B (new substitute for PTO-1449) listing all of the references that are listed in the initialed PTO-1449. No new references have been added. Applicant respectfully requests that the Examiner initial the references listed in this form to remove any ambiguity and confirm that all listed/cited references have been considered.

Although the Examiner states on page 2 that the foreign references have been considered, the Examiner states on page 4 that in regard to JP Application 2000-70412, sections 1-5 of 37 C.F.R. § 1.98 must be satisfied and "not just one of the five." Therefore, Applicant is confused as to whether this reference was considered by the Examiner or whether the Examiner maintains that not all of the sections of 37 C.F.R. § 1.98 have been satisfied. Applicant is further confused in that 37 C.F.R. § 1.98 is comprised of sections (a)-(d), and therefore, Applicant is unsure which five sections 1-5 the Examiner is referring. Accordingly, if the Examiner maintains that any section of 37 C.F.R. § 1.98 has not been met, and as a result JP Application 2000-70412 has not been considered, Applicant respectfully requests that the Examiner state which particular section has not been met.

II. Claim Rejections

Claims 1 and 4-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Higuchi et al. (U.S. Patent No. 5,830,085) in view of OFFICIAL NOTICE. Applicant traverses the rejections for at least the reasons discussed below.

To establish a prima facie case of obviousness the Examiner must show that the prior art references, when combined, teach or suggest all of the claim limitations. See MPEP § 2143. Applicant respectfully submits that the references cited above by the Examiner fail to teach or suggest all of the claim limitations as set forth in the present application. Specifically, the cited references fail to teach a mantle/solid core compression ratio of at least 0.98.

The Examiner acknowledges on page 4 of the present office action that "Higuchi et al. does not teach the ratio claimed by the applicant." However, the Examiner explains that Higuchi teaches hardness values for the surface of the core and the mantle that are approximately equal, and "since the hardness ratios are approximately 1, it is submitted that the compression ratio is also about 1, i.e. approximately 0.98." See office action at page 2. Higuchi also teaches that the hardness of the mantle layer is higher than the hardness of the core surface. See Higuchi at col. 4:37-39. Moreover, Higuchi explains that the harder mantle layer serves to "compensate for a loss of restitution of the solid core which is formed soft." Id. at col. 4:49-50. This requires the mantle to be "formed of a material having improved restitution." Id. at col. 4:51. In other words, the mantle of Higuchi increases the restitution and decreases the compression by being harder than the surface of the core. As a result, the compression of the mantle would be less than the compression of the core.

The present specification, page 4, lines 21 to 25 explains that "compression" signifies the amount of deflection or deformation that occurs when a ball or ball component is subjected to a load of 1,275 N (130 kgf) from an initial load of 98 N (10 kgf). In the present invention, the compression of mantle signifies not the hardness of the mantle itself but the hardness of a ball consisting of a core and a mantle enclosing the core. Compression is related to many factors such as the hardness of the rubber or resin in one layer, the thickness of the mantle, the degree of the hardness of the core between the center and the surface and the diameter of the core ball enclosed by the mantle. To help explain the relationship between the hardness of the mantle and core surface versus the compression ratio, Applicant has provided below portions of Table 3 found on page 11 of the specification. The Shore D hardness values have been converted into JIS-C values using the formula Shore D=(0.76*JISC)-8.

		EX				CE				
		1	2	3	4	1	2	3	4	5
Core	Surface Hardness	72	72	73	73	73	76	71	70	72
	Center hardness	63	63	63	63	63	66	62	67	63
	Compression (m)	4.01	4.01	3.91	3.91	3.89	3.49	4.16	3.9	4.0
Mantle	Shore D	40	30	25	30	40	47	47	40	
	Converted JIS-C*	63	50	43	50	63	72	72	63	
	Compression	4.05	4.13	4.05	3.82	3.71	3.18	3.8	4.03	
Compression ratio (mantle/core)		1.01	1.03	1.04	0.98	0.95	0.91	0.91	1.03	
JIS-C hardness of the mantle / JIS-C hardness of the core surface		0.88	0.69	0.59	0.68	0.87	0.95	1.02	0.90	

As can be seen from the above table, when the hardness of the mantle and the hardness of the core surface are approximately one (i.e. comparative example 3), the compression ratio is 0.91. Clearly, the Examiner's conclusion that "since the hardness ratios are approximately 1, it is submitted that the compression ratio is also about 1, i.e. approximately 0.98," is not accurate. The above table provides evidence that is contrary to the Examiner's conclusion, however, the

above table is consistent with Higuchi's explanation that providing a harder mantle will increase restitution and thereby decrease the compression.

Also provided below is a table based on Table 3 of Higuchi showing the relationship between the hardness of the mantle to the hardness of the core surface.

Table based on TABLE 3 of Higuchi

Examples		1	2	3	4	5	6	7
Core	Surface hardness(JIS-C)	74	70	74	66	80	74	76
Intermediate layer	Hardness(JIS C)	76	75	80	70	84	80	80
JIS-C hardness of the intermediate layer / JIS-C hardness of the core surface		1.03	1.07	1.08	1.06	1.05	1.08	1.05

As is shown from the above table, the ratios of the hardness of the mantles to the hardness of the core surface are all greater than one. This is consistent with the teachings of Higuchi that requires that the hardness of the mantle layer is higher than the hardness of the core surface. See Higuchi at col. 4:37-39. These ratios appear to be similar to comparative example 3 above. As stated earlier, comparative example 3 shows the situation where the ratio of the hardness of the mantle and the hardness of the core surface are approximately one. The resulting compression ratio is 0.91, which is outside the range recited in claim 1. Based on this comparison, it can be expected that the compression ratios of Higuchi are also outside the range recited in claim 1.

The Examiner also indicated in the present office action that Higuchi was not used to teach the ratio as a whole, but instead, the Examiner has used "inferences which one skilled in the art would reasonably be expected to draw" based on Higuchi. However, as explained above, the inferences that were drawn (i.e. "since the hardness ratios are approximately 1, it is submitted that the compression ratio is also about 1, i.e. approximately 0.98") are inaccurate.

Finally, the Examiner also takes OFFICIAL NOTICE that "having a mantle deformation amount similar to that of the core would not provide any significant change to the restitution of the golf ball." Further, the Examiner concludes "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have the compression ratio of the mantle similar to that of the core...for the purpose of routine optimization [in order to] obtain the resilience and hitting feel desired for the present invention."

Applicant submits that the Higuchi reference not only teaches away from this conclusion, but modifying the Higuchi ball as suggested by the Examiner's OFFICIAL NOTICE would destroy the intended purpose of the Higuchi invention. As explained above, Higuchi teaches a mantle layer who's purpose is to "compensate for a loss of restitution of the solid core which is formed soft." See Higuchi col. 4:49-50. In other words, Higuchi teaches a mantle layer whose purpose is to change the restitution of the golf ball by providing a mantle layer having a compression that is different from the compression of the core. As a result, Higuchi teaches a mantle layer that increases restitution and decreases the mantle compression, instead of, as the Examiner suggests in the OFFICIAL NOTICE, having a mantle deformation amount similar to that of the core.

Additionally, modifying the golf ball of Higuchi to have a compression ratio of at least 0.98 would destroy the intended purpose of the Higuchi golf ball. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there it no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Here, as shown in the above tables, in order to make the compression ratio at least 0.98, the hardness of the mantle layer must be less than the hardness of

the core surface. Higuchi teaches a mantle layer that is harder than the core surface in order to "compensate for a loss of restitution of the solid core which is formed soft." See Higuchi col. 4:49-50. Therefore, in order to modify the Higuchi ball to have a compression ratio of at least 0.98, the hardness of the mantle layer of Higuchi would have to be less than the hardness of the core surface. However, Higuchi expressly teaches that the mantle layer must be harder than the core surface. As a result, modifying the Higuchi golf ball as suggested in the OFFICIAL NOTICE would make the golf ball of Higuchi unsatisfactory for its intended purpose (i.e. providing a mantle layer that would compensate for a loss of restitution of the solid core which is formed soft). Accordingly, since the Examiner's proposed modification would make the Higuchi golf ball unsatisfactory for its intended purpose, there it no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In view of the above, Applicant requests that the rejection of claim 1 under 35 U.S.C. § 103(a) be reconsidered and withdrawn. Furthermore, since claims 4-16 depend from claim 1, and since the cited references do not disclose all of the limitations of claim 1, Applicant submits that claims 4-16 are patentable at least by virtue of their dependency from claim 1. Accordingly, Applicant respectfully requests that the rejections of claims 4-16 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Mike:
Please sign.

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 17 is added as a new claim.

Substitute for Form 1449 A & B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	09/667,301
Confirmation Number	1597
Filing Date	September 25, 2000
First Named Inventor	Hideo WATANABE
Art Unit	3711
Examiner Name	Alvin A. HUNTER
Attorney Docket Number	Q60969

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number	Document Number: Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
AAH		US 5,556,098		09/17/1996	Higuchi
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code[3]	Foreign Patent Document: Number[4]	Foreign Patent Document: Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation[6]
AAH		JP	2000-70412		03/07/2000		
AAH		JP	2 658 811		06/06/1997		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation[6]

Examiner Signature	AAH	Date Considered	6/2/02 9/9/02 AAH

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or in the comment box of this document. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to indicate here if English language Translation is attached.